

**Brown's Sales and Service
Windsor, Vermont**

**Site Investigation
SMS#92-1340**

June 1998

Prepared For:

**Brown's Sales and Service
40 Hartland Road
Windsor, VT 05089**

DSM ENVIRONMENTAL SERVICES, INC.
Engineers, Economists, Environmental Scientists, Planners

*Thrasher Rd. & Route 5, PO Box 466, Ascutney, VT 05030
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**BROWN'S SALES AND SERVICE
SITE INVESTIGATION
Windsor, Vermont**

June 1998

40 Hartland Road, Rt. 5
Windsor, Vermont 05089

SMS Site Number: 92-1340

Latitude/Longitude: 43°29'50"N 72°23'40"W

Contact: Mr. Kenneth E. Brown
Brown's Sales and Service
40 Hartland Road
Windsor, VT 05089

Phone: (802) 674-6731

Engineer: Theodore Reeves, P.E.
DSM Environmental Services, Inc.
PO Box 466
Ascutney, VT 05030
Phone: (802) 674-2840
Fax: (802) 674-6915

Appendices

- A List of Adjacent Landowners
- B Locus, Site, and Groundwater Maps
- C Historic Reports/Data
- D Source Protection Areas
- E Soils Information
- F Boring Logs/Well Construction Logs
- G Lab Results

Aug 21 11 14 PM '98

Executive Summary

In November 1992, three underground storage tanks (USTs) were uncovered and removed from the Brown's Sales and Service (Brown's) facility located on US Route 5 in Windsor, Vermont. Soils were excavated and removed from the site in conjunction with the UST closure. Field observations, as well as a release of petroleum products, led the Vermont Agency of Natural Resources (VANR) to request that Brown's proceed with a site investigation.

In response to VANR and on the behalf of Brown's, DSM Environmental Services, Inc. (DSM) developed a groundwater investigation program for Brown's Sales and Service. The site workplan was approved by the Vermont Department of Environmental Conservation and the investigation commenced on April 27, 1998 with the advancement of four borings, completed as groundwater monitoring wells.

Subsurface soil encountered ranged from well sorted fine sand and silt to coarser sands and gravel. Headspace analyses and field observations gave clear indication of soil contamination by volatile organic compounds (VOCs).

Groundwater was sampled on May 5, 1998 and submitted for Total Petroleum Hydrocarbon (TPH) and VOC laboratory analyses. TPH was detected in groundwater from MW-2, MW-3 and MW-4. TPH concentrations at MW-3 and MW-4 exceeded method detection limits by three orders of magnitude. The volatile organic compounds benzene, ethylbenzene, toluene and xylenes (BETX) were detected at MW-2, MW-3 and MW-4 in concentrations exceeding method detection limits by as much as three to four orders of magnitude.

The results of this investigation support the conclusion that one or more releases of a regulated material has occurred on the Brown's Sales and Service site. The extent of TPH and BTEX contamination associated with Brown's cannot be defined by the groundwater monitoring network currently in place onsite. Further definition of these contaminant plumes and assessment of potential risk to receptors would require the installation and monitoring of groundwater wells on the Brown's property. Receptors in closest proximity to the site include the residences located north and east of the site, and the Connecticut River. There are no public or private water supplies in the vicinity of the site. This area is provided water and wastewater by public utilities.

On the basis of findings presented in this report, specifically, the presence of concentrations of VOCs on-site along the eastern site boundary, DSM Environmental Services, Inc., recommends that additional investigative work be completed. It is DSM's opinion that the existing groundwater monitoring network should be extended north, east and south of the site and east of US Route 5.

Site Information

The names, addresses and phone numbers of the site owner, site operator and adjacent property owners are shown below in Table 1.

TABLE 1
SITE INFORMATION - CONTACT LIST

CONTACT TYPE	NAME	ADDRESS	PHONE NUMBER
Site Owner	Kenneth E. Brown	40 Hartland Road Windsor, VT 05089	(802) 674-6731
Site Operator	Same	same	same
List of Adjacent Landowners	See Appendix A		

Site History

Brown's Sales and Service (Brown's) is a full service automobile service facility located on US Route 5, north of the village of Windsor, Vermont. Refer to Appendix B for the site locus map, site plan and other figures. Brown's has sold and serviced vehicles at this location for approximately 45 years. The facility consists of a single building housing maintenance, office, storage and eating areas. The structure was constructed on a concrete slab.

The site is located within the geologic floodplain and valley for the Connecticut River. No open surface water bodies have been identified on or immediately adjacent to the site. The property is bounded on the west by a hillside (with residential properties), the east by US Route 5, and the north and south by mixed commercial and residential properties. Refer to Appendix A for a list of adjacent landowners.

In November 1992, three underground storage tanks were uncovered and removed from the site. This information is included in a letter report dated November 30, 1992, prepared by Ms. Jennifer von Rohr employed by New England Industrial Maintenance, Inc.(NEIM). The report, addressed to Mr. Marc Coleman of the Vermont Agency of Natural Resources (VANR) states that, "... Additionally, one excavated tank (No.3) was found to exhibit some pitting, and one hole was identified on tank No. 2." According to Mr. Brown, no hole existed in the tank until the time the tank was removed. Although this was noted in the letter report, there is no further information as to where the hole was located on the tank itself (top, bottom, etc.), nor is there a complete site diagram indicating where the numbered tanks were located in relation to the excavation. Mr. Brown states that he never received a copy of the report and a signature of the owner is not present on the Agency UST Removal Form.

NEIM also noted excavations that were done around the pump island to determine the extent of contamination. PID readings in these test pits were 38 to 42 ppm in the first pit at 6 feet and PID readings that increased with depth and ranged from 19 ppm at 2-4 feet, to 86 ppm at 11-12 feet. The NEIM report also indicates approximately 96 cubic yards of material was excavated and stored on-site under plastic prior to its removal. The site sketch does not indicate where these soils were stockpiled.

A spill was reported by NEIM during the cleaning of the tank when an estimated, "... 2 to 3 gallons of gasoline product was inadvertently released to standing water (i.e., puddles) present on the site. This material was immediately contained with sorbent material and the entire spill was cleaned up by NEIM in approximately 20 minutes." Mr. Brown stated that the spill occurred as the tanks were removed, and the volume was greater than 2 to 3 gallons.

Based on a review of the above report and the results of the field screening of soil samples with a photoionization detector (PID) yielding PID readings ranging from 3.5 to 233 ppm, along with the noted hole in tank #2, suggests a release occurred at this site in the past.

On November 25, 1997, the VANR requested that Brown's proceed with an investigation of the property that would identify and quantify any existing subsurface and groundwater contamination by petroleum hydrocarbons. In compliance with this request, Brown's retained DSM Environmental Services Inc., (DSM). DSM reviewed the site history and site conditions, and developed a workplan for a site investigation detailing the advancement of soil borings and their completion as groundwater monitoring wells. The Workplan was approved by the Vermont Department of Environmental Conservation and the investigation commenced on April 27, 1998. This report summarizes the finding of DSM's investigation.

Hazardous Waste Storage and Disposal Practices

Hazardous wastes generated at Brown's are associated with equipment service and maintenance. Diesel fuel is currently stored in a 550 gallon aboveground tank. Gasoline is stored in one 10,000 gallon underground tank located in the vicinity of the existing fuel pump island. This dual-compartment tank replaced the underground storage tanks removed from the site in 1992. Other hazardous materials used and stored on-site include solvents or degreasers kept at various locations within the vehicle maintenance area of the garage. Once spent, these materials are stored in a 55 gallon drum and incinerated as fuel in an on-site heating furnace.

Underground storage tank closure activities were monitored by Mr. Marc Coleman of the Vermont Agency of Natural Resources Underground Storage Tank Program, as well as New England Industrial Maintenance. According to Mr. Brown and reports DSM has received from the Agency of Natural Resources, soils contaminated with petroleum products were removed from excavations at the site during the closure of the USTs. During DSMs work on the site, we did not note any stockpiled soils. According to Mr. Brown, the contaminated soils were removed from the site and trucked to a property adjacent to Interstate 91 at Exit 9. A complaint necessitated removal of the soils from this site. The soils were transported to a gravel pit owned

by Miller Construction on Route 5, in Windsor, Vermont. DSM staff talked with Miller Construction concerning these soils, however, the status of these soils is currently not known.

Past Releases of Hazardous Materials

The only known past releases of hazardous materials/waste on-site are associated with excavated underground gasoline tanks summarized under site history. A November 30, 1992 letter report summarizing field activities associated with the excavation of these tanks is located in Appendix C.

Receptors

All potential receptors were identified in the vicinity of the underground storage tanks (USTs) at the Brown's site. Each potential receptor is described below.

Water Supply Wells

There are no known water supply wells within 1,000 feet of the site.

Community Water Supplies

There are no known community water supplies within 1,000 feet of the site.

Surface Waters and Wetlands

The Connecticut River is located approximately 1,400 feet east of the site. Town of Windsor water supply wells are located approximate 5,500 feet south of the site. We did not identify any wetlands or surface water bodies within 1,000 feet of the site. Please refer to Appendix D for the Vermont Department of Environmental Conservation Water Supply Division map of source protection areas.

Buildings with basements

Residential dwellings with basements, are located north, south and west of the site. There are no buildings with basements located east or northeast of the site. None of these buildings are within 200 feet of the former UST location.

Sensitive Ecological Areas

No sensitive ecological areas have been identified in the area around the site.

Utility Corridors

The site and adjacent properties are serviced by public water and wastewater utilities. These utilities are located within US Route 5.

Areas of Direct Contact Threat

No areas of direct contact threat were identified on the site.

Contaminant

Historic site usage of USTs, physical evidence of contamination noted at the time of tank removal, and analytical data gathered to date show the contaminants of concern to be petroleum hydrocarbons and BTEX compounds, common to gasoline.

Geology

The site sits within the Connecticut River valley floodplain and is underlain by fluviially deposited fine sand locally interbedded with silt or coarser sands and gravel. Bedrock was not encountered during this investigation.

Soils

Soils in the area of the site investigation are mapped as B2 Belgrade silt loam by the US Department of Agriculture, Soil Conservation Services (SCS). These soils are typically moderately well drained, with slopes in the range of 3 to 8%. The complete SCS description including the Soil Survey Field Sheet, Field Soil Maps Unit name, and Soil Interpretation Record is attached to this report as Appendix E.

Subsurface Investigation

A total of four borings were advanced and completed as groundwater monitoring wells at the Brown's Sales and Service facility on April 27, 1998. Soil sampling conducted during boring advancement was used for field screening and lithologic characterization. The groundwater monitoring wells were located and constructed to facilitate characterization of groundwater quality and flow direction. Justification for individual monitoring well location is provided below.

Upgradient Well -- MW-1

This well was installed north of the Brown's Sales and Service building and northwest of the former UST site, just inside the facility fence.

Justification

MW-1 was intended as an upgradient water quality monitoring point for the site investigation.

Down- or Crossgradient Well -- MW-2

MW-2 was located immediately north of the facility building, southwest of the former USTs and just east of the facility fence.

Justification

This well was located and installed to provide a point for monitoring groundwater quality and flow direction. Information derived from this sampling location is used to delineate any contaminant plume present.

Down- or Crossgradient Well -- MW-3

MW-3 was located on the west edge of Route 5, east-northeast of the former UST area and north of the existing underground gasoline storage tank.

Justification

As with MW-2, this well is located and installed in an effort to provide additional downgradient water quality and elevation data. It was anticipated that this well would intercept a contaminant plume.

Downgradient Well -- MW-4

MW-4 was installed on the west edge of Route 5, north of the existing fuel pump island and UST.

Justification

Like MW-2 and MW-3, this well is intended to provide a down or cross-gradient access point to groundwater for sample collection as well as groundwater table elevation and gradient information.

Well Boring Advancement and Soil Sampling

Each of the four site borings were advanced using 4-inch hollow stem augers. Soil samples were collected continuously from approximately 5 to 10 feet below grade and from 15 to 17 feet using a 2-inch diameter split spoon sampling device driven with a 140 pound hammer. Recovered soil samples were characterized and placed in resealable plastic storage bags for field headspace analysis using a photoionization detector (PID). Detailed logs presented in Appendix F document sample recovery, blow counts, lithology, PID head space results and other observations at each of the boring locations. It was intended that borings be advanced approximately 5 feet into the saturated zone.

Monitoring Well Installation

All borings were completed using 2-inch diameter, schedule 40 flush-threaded PVC risers, 10-foot long 0.10-inch factory slotted PVC screens and a bottom plug. All well screens intersect the water table, extending approximately 5 feet into the saturated zone.

Each well was centered within its borehole while clean silica sand was placed in the annular space surrounding the well screen to a depth of approximately 1 ½ feet above the top of the screen. This sand pack was directly overlain by an approximately 1 ½ to 2 foot thick layer of bentonite chips. Sand and bentonite chips used in the well construction were introduced to the wells from ground level and allowed to settle before well installation proceeded. Each well was completed with a removable, screw-threaded friction cap and flush mount road box. Protective casings at each location were set above the bentonite chips, fully encased in concrete and secured. Well construction detail sheets/boring logs are included in Appendix F.

Subsurface Characterization

Native subsurface soil encountered consisted of well sorted very fine sand and silt underlain by coarser sand and gravel. Thin (1-foot) lenses of coarse sand and trace gravel were observed within the very fine sand and silt at locations MW-1 and MW-4, respectively. Presumed sand and gravel fill material was evident at all boring locations, with the possible exception of MW-3. Bedrock was not encountered during this investigation.

Groundwater Flow Direction

Groundwater was encountered approximately 11 feet below ground surface. Table 3 summarizes well and water level data. The Groundwater Table Map derived from these data (Appendix B) shows the water table to be relatively flat across the site, with groundwater flowing to the northeast.

TABLE 3
MONITORING WELL DATA FROM 5/5/98
Measured from Top of PVC Riser

Monitoring Well	Location	Depth to Groundwater (Feet)	Depth of Water in Well (Feet)	Assumed Groundwater Elevation ⁽¹⁾ (Feet)	Elevation Top of PVC (Ft)
MW-1	NW of Former UST Area	10.52	4	88.08	98.6
MW-2	N of Building/ SW of Former UST Area	10.71	3.83	88.19	98.9
MW-3	NE of Former UST Area	10.6	3.97	87.9	98.5
MW-4	SE of Former UST Area N of current UST	11.17	3.48	87.93	99.1

⁽¹⁾ Groundwater elevations are based on an assumed datum.

Groundwater and Surface Water Sampling

Four groundwater and two surface water samples were collected and submitted for laboratory analysis on May 5, 1998.

Groundwater

Prior to groundwater sampling, each road box was evaluated for signs of damage, tampering or water time infiltration. No problems were evident. The inner friction plug was then removed at which a PID reading was recorded. The well was left open to allow water pressures to equilibrate before depth to water in the wells was measured using an electronic tape. All measurements were recorded in a fieldbook and used to calculate three well volumes; the amount of water needed to purge from each well before a representative groundwater sample could be retrieved. PID readings were elevated at MW-2 (150 ppm), MW-3 (220 ppm) and MW-4 (100 ppm).

A factory-sealed disposable bailer and length of new nylon twine was dedicated to each of the groundwater monitoring well locations. This eliminates the potential of cross contamination between wells and the need for field decontamination of sampling equipment. All practices outlined in the site Health and Safety Plan were followed. Field notes made at the time

of sampling documented water clarity during the purging process as well as the purging time and actual volume of water purged at each of the well locations. Samples were collected from each of the groundwater monitoring wells using the dedicated bailers and laboratory-supplied containers.

Water Quality

Analyses

All samples, along with a Field Blank, were submitted to Eastern Analytical, Inc., (EAI) for analysis by methods 8021B (volatile organic compounds BTEX.) and 8100-L1 (total petroleum hydrocarbons or TPH). The samples were sealed in individual "zip-lock" bags, placed in a cooler with ice packs and shipped under chain-of-custody via overnight courier.

Results

TPH concentrations were below the limits of detection (<0.5 ppm) at MW-1 and slightly above that level at MW-2 (1.8 ppm). TPH concentrations in groundwater from MW-3 (100 ppm) and MW-4 (110 ppm) were 3 orders of magnitude above the method detection limit. Total BTEX (Benzene, Toluene, Ethylbenzene and xylenes) were below the limits of detection at MW-1 and one to two orders of magnitude above detection limits at MW-2 (0.50 mg/L or ppm). Total BTEX at MW-3 (105 ppm) and MW-4 (195 ppm) were three to four orders of magnitude above the method detection limits. Refer to Appendix G for the EAI's laboratory report and Table 4 for a summary of these data.

TABLE 4
TPH AND VOCs DETECTED IN GROUNDWATER

	Method Detection Limit	MW-1	MW-2	MW-3	MW-4
TPH (mg/L)	<0.5	<0.5	1.8	100	110
MTBE (ug/L)	<10	<10	50	<10,000	20,000
Benzene (ug/L)	<1	<1	22	29,000	54,000
Toluene (ug/L)	<1	<1	100	53,000	82,000
Ethylbenzene (ug/L)	<1	<1	150	4,000	6,000
m,p-Xylene (ug/L)	<1	<1	150	15,000	26,000
o-Xylene (ug/L)	<1	<1	29	4,000	7,000
Total BTEX (ug/L)			501	105,000	195,000

Nature and Extent of Contamination

Plume Definition

As was presented above, notably elevated TPH and BTEX concentrations were found in MW-3 and MW-4. Data collected indicates that the plume extends beyond the investigation area. Consequently, the full extent of the identified contaminant plume has not yet been delineated. While it is possible to generate TPH and Total BTEX iso concentration maps across the site, additional data north and east of the site would be necessary to make such maps meaningful.

Free Product

Oily sheens and strong petroleum odors were noted at monitoring locations MW-2, MW-3 and MW-4. While no free product was evident in the initial bailer full of water from each well, several inches of darker water was observed to clear water at the top of the initial bail from MW-3 and MW-4.

Conclusions

Results of groundwater sampling done as part of this field investigation support the conclusion that one or more releases of petroleum product has occurred on the Brown's Sales and Service property. A release has likely occurred in the vicinity of the former underground storage tank area located north/northeast of the Brown's Sales and Service building. TPH and BTEX concentrations were most elevated at MW-3 and MW-4, located along the eastern boundary of the study area. This area is hydrogeologically downgradient from the former UST area and fuel pump island, respectively. The extent of TPH and BTEX contamination associated with Brown's can not adequately be defined by the groundwater monitoring network currently in place onsite. Further definition of these contaminant plumes would require the installation and monitoring of groundwater wells north, northeast and east of the Brown's property. While the plume(s) could extend beneath the Brown's building itself, there is no basement on the premises into which vapors could enter to pose a threat to human health or the environment on-site. Further definition of the extent of contamination would be necessary before conclusions could be reached regarding the potential threat to off-site receptors. Residences in the area are on town water and sewer, and the Town of Windsor water supply wells are well south of Brown's.

Appendix A

List of Adjacent Landowners

Appendix A

List of Adjacent Landowners

Map#	Lot#	Plot#	Property Owner(s)	Mailing Address
4	430	035	Ada H. and I. Winthrop Jr. Townsend	35 Hartland Road, Windsor
4	430	037	Kenneth T. and Debra R. Brown	37 Hartland Road, Windsor
4	430	041	David and Marie Carmichael	41 Hartland Road, Windsor
4	430	042	Edmund and Joyce Mondigo	42 Hartland Road, Windsor
4	430	046	James B. and Mary J. Bennett % Vermont Federal Bank	46 Hartland Road, Windsor
4	520	033	Roger C. and Shirley J. Gilman	33 Juniper Terrace, Windsor
4	520	037	Margaret I. Mayo	37 Juniper Terrace, Windsor
4	520	041	Edward S. Jr. and Betty L. Micka	41 Juniper Terrace, Windsor

Appendix B

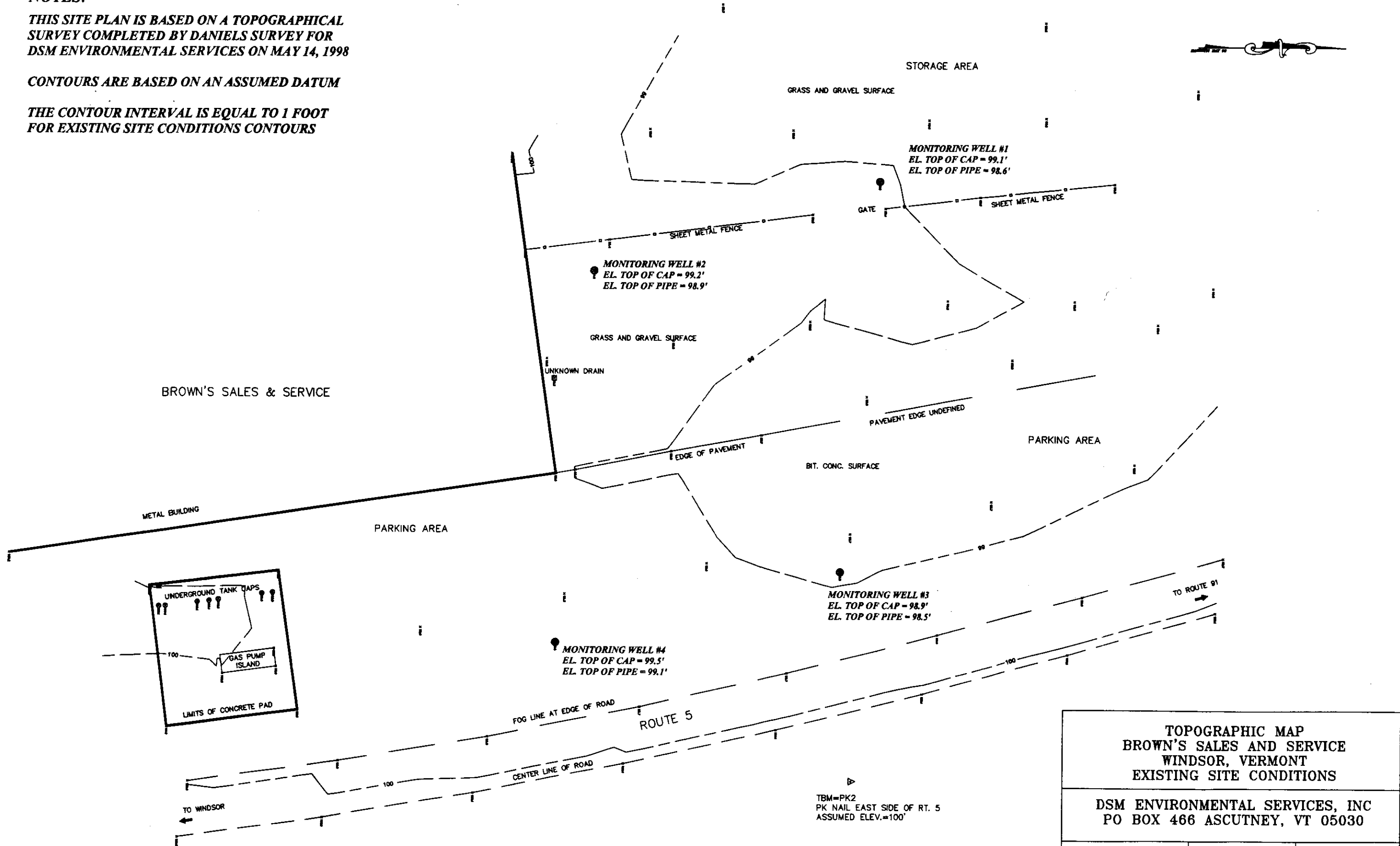
Locus, Site, and Groundwater Maps

NOTES:

THIS SITE PLAN IS BASED ON A TOPOGRAPHICAL SURVEY COMPLETED BY DANIELS SURVEY FOR DSM ENVIRONMENTAL SERVICES ON MAY 14, 1998

CONTOURS ARE BASED ON AN ASSUMED DATUM

THE CONTOUR INTERVAL IS EQUAL TO 1 FOOT FOR EXISTING SITE CONDITIONS CONTOURS



TOPOGRAPHIC MAP BROWN'S SALES AND SERVICE WINDSOR, VERMONT EXISTING SITE CONDITIONS		
DSM ENVIRONMENTAL SERVICES, INC PO BOX 466 ASCUTNEY, VT 05030		
DATE: 22 JULY, 1998	SCALE: 1"=20'	SHEET 1 OF 2
DESIGNED BY: L. EICKHOF	CHECKED BY: T. REEVES	

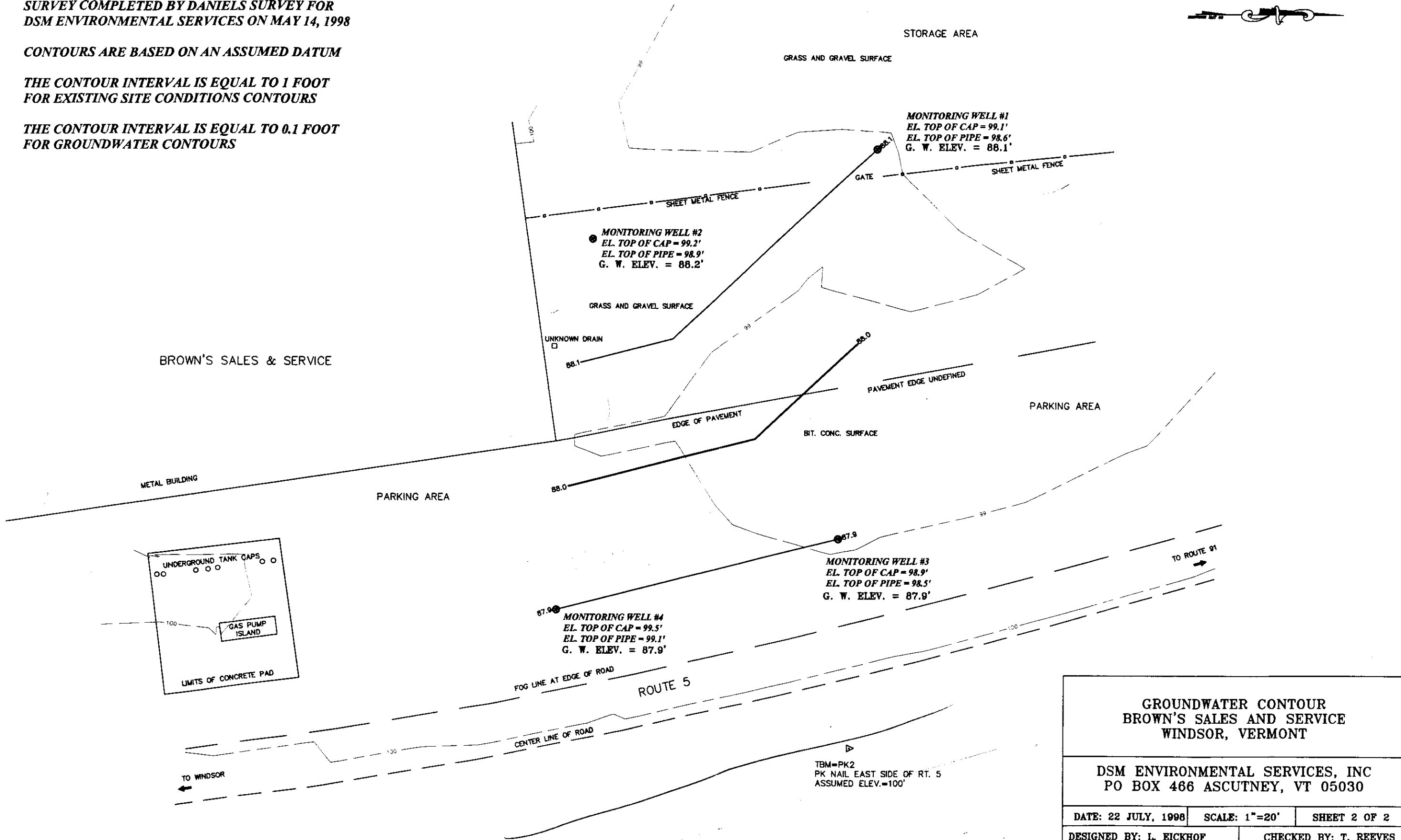
NOTES:

THIS SITE PLAN IS BASED ON A TOPOGRAPHICAL SURVEY COMPLETED BY DANIELS SURVEY FOR DSM ENVIRONMENTAL SERVICES ON MAY 14, 1998

CONTOURS ARE BASED ON AN ASSUMED DATUM

THE CONTOUR INTERVAL IS EQUAL TO 1 FOOT FOR EXISTING SITE CONDITIONS CONTOURS

THE CONTOUR INTERVAL IS EQUAL TO 0.1 FOOT FOR GROUNDWATER CONTOURS



8 A(C)

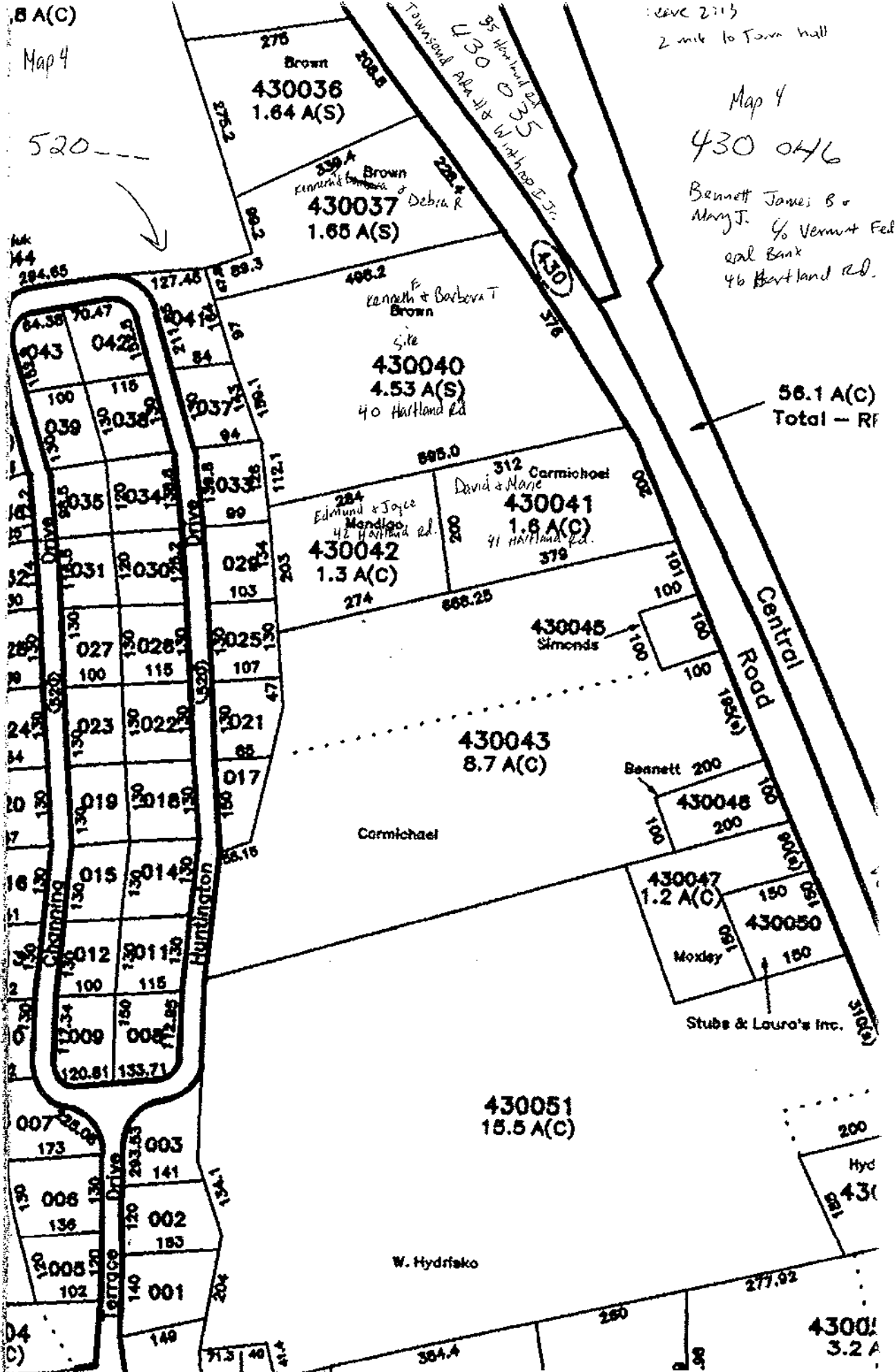
Map 4

520

041
Micka Edward Sr.
& Betty L.
41 Juniper Terrace

037
Mayo Margaret I
375 Juniper Terr

033
G. Man Rogers
& Shirley J
33 Juniper Terr



Leave 2:15
2 mile to Town hall

Map 4

430 046

Bennett James B &
Mary J. 1/2 Vermont Fed
real Bank
46 Hartland Rd.

56.1 A(C)
Total - RF

Central
Road

W. Hydrisko

430052
3.2 A

Appendix C

Historic Reports/Data



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0181 TDD>Voice
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street / West Building
Waterbury, Vermont 05671-0404
switchboard (802) 241-3888
facsimile (802) 241-3296

FACSIMILE

Date: 6-11-98
Pages: 5 (including cover page)

PLEASE DELIVER ACCOMPANYING MATERIAL TO:

Name: Ted Reeves
Fax #: (802) 6746915

COMMENTS:

Here is the tank pull form. Call if you
have any questions.

From: Lynda Provencher
Phone#: (802) 2413883

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0404
(802) 244-8702

MAY 31 1998

Date of Removal: 11/23/92 Date of Assessment: 11/23/92
Person & Company Doing Assessment: Jennifer von Rohr, New England Industrial Maintenance
Telephone Number: 863-8714

Business Name Where Tank(s) Located: Brown's Sales and Service
Number of Employees: 6
Street Address & Town/City: Route 5, Windsor, VT

Owner of Tank(s): Ken Brown
Address: R.R. 1
Town/City: Windsor, VT 05089

Contact Person: Ken Brown
Phone Number: 674-6731

UST Facility ID Number:

Tank #	Product	Size	Condition
1	Gasoline	3,000 gallons	Fair-rust but no holes identified
2	Gasoline	3,000 gallons	Rust and one hole identified
3	Gasoline	3,000 gallons	Fair-Rust with pitting. No holes identified
4	Gasoline	2,000 gallons	Fair-Rust, but no holes identified

Reason for Tank Removal (check one): ☐ abandoned ☒ routine replacement
☐ tank or piping leaking ☐ liability

Replacement Tank(s)? ☒ yes ☐ no Number of Replacement Tanks: 1 to be installed

DEC UST Permit (if installed) ☒ yes ☐ no

DEC-Permitted Tank(s) Still On-Site? ☐ yes ☒ no Number of Tanks: _____

Out of Service Tank(s) On-Site? ☐ yes ☒ no Number of Tanks: _____

Heating Oil Tank(s) On-Site? ☐ yes ☒ no No. of Tanks: _____ Size(s): _____

Any Waste Pumpage? ☒ yes ☐ no Estimated Volume: 30 gallons

Transported By: NEIM

27'x18' =

Size of Excavation (ft²): 486 sq ft Depth: 9 ft Soil Type: sand - clay

Concentrations Detected with PID: Peak = 233 ppm Average = 80 ppm

Type of PID: Phoenix Environmental GVM 580 B

Number of Readings (please put locations on attached drawing): 24

Calibration Info. (date, time, type of gas): 11/23/92; 0715; isobutylene 56 ppm

Free Phase Product Encountered? ☐ yes ☒ no Approx. Amount: _____

Cont. Soils Stockpiled? ☒ yes ☐ no Amount (yd³): 96 cu yds

Cont. Soils Backfilled? ☐ yes ☒ no Amount (yd³): _____

Groundwater Encountered? ☐ yes ☒ no Depth to Groundwater: >12' (not encountered)

Monitoring Wells Installed? ☐ yes ☒ no Number: _____ Screen Depth: _____

On-Site Drinking Well? ☐ yes ☒ no (if yes: ☐ rock ☐ gravel ☐ spring)

Public Water Supply Well(s) Within 1/4 Mile? ☒ yes ☐ no

Distance to nearest: (1) ~ 1/2 mile Aquifers

Private Water Supply Well(s) Within 1/4 Mile? ☐ yes ☒ no How Many? _____

Samples Collected for Laboratory Analysis? ☐ yes ☒ no How Many? _____

(check all that apply: ☐ soil ☐ groundwater ☐ drinking water)

Receptors Affected (check all that apply):

☒ soil ☐ residential; # of houses/people: _____

☐ groundwater ☐ surface water; name/type of water body: _____

Signature of Owner or Authorized Representative: _____

Date: _____

Signature of Person Performing Site Assessment: Jennifer von Rohr

Date: NOV 25, 1992

*** ATTACH OBSERVATIONS, CONCLUSIONS, AND DRAWING ON A SEPARATE PAGE ***

White - DEC File Copy

Yellow - DEC File Copy

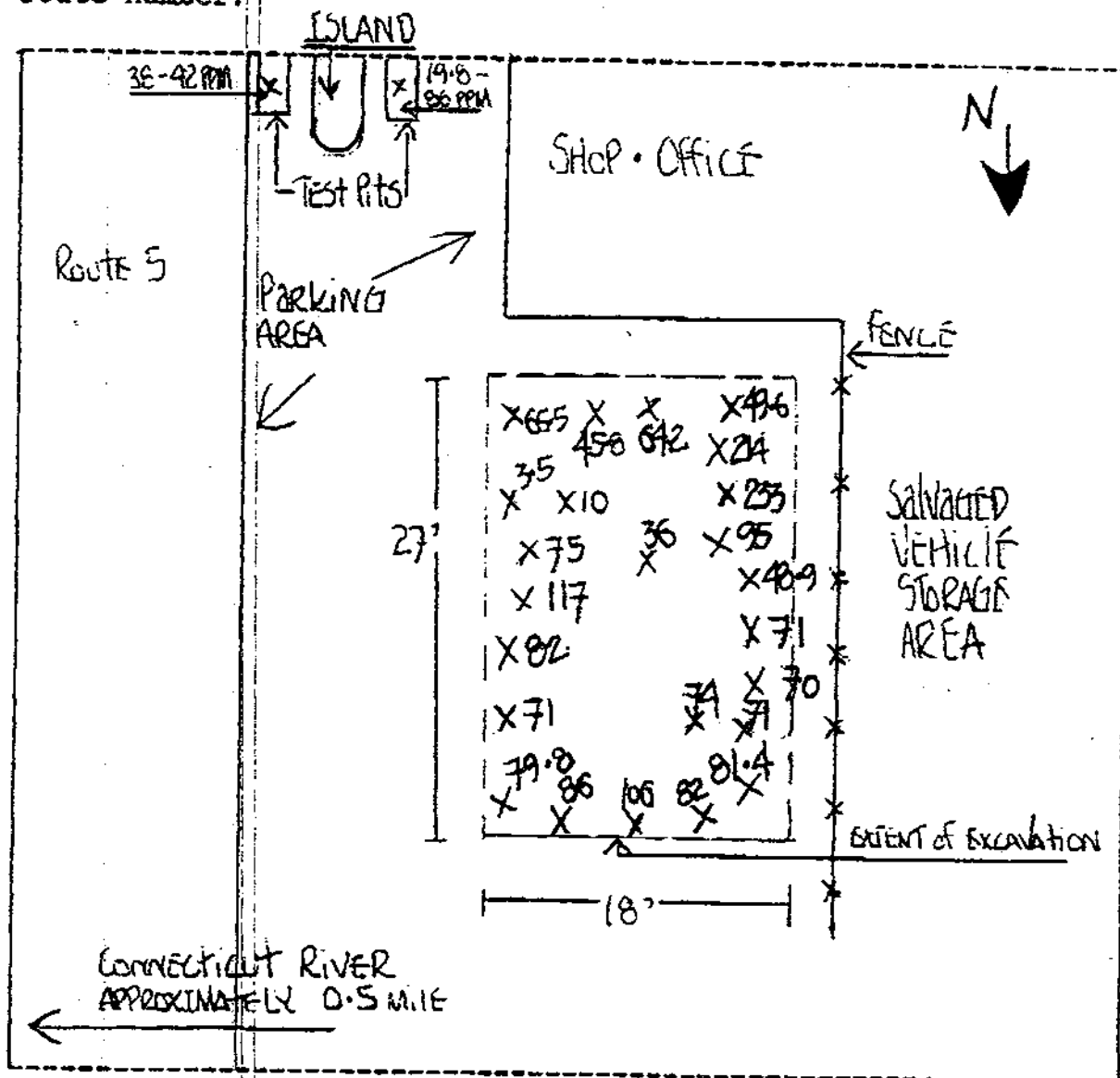
Pink - Owner Copy

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
TANK PULL FORM

TODAY'S DATE: NOVEMBER 25, 1992 INSPECTOR: JENNIFER von KENZ - NEIM
DATE OF REMOVAL: NOVEMBER 23, 1992 BUSINESS NAME: BROWN'S Sales AND SERVICE

SITE DIAGRAM

Show location of all tanks and distance to permanent structures, sample points, areas of contamination and any pertinent site information. Indicate North arrow and major street names or route number.



NOTE: X 81.4 INDICATES PID READING AT IDENTIFIED LOCATION



New England Industrial Maintenance, Inc.

76 Ethan Allen Drive So Burlington, Vermont 05403

November 30, 1992

Mr. Marc Coleman
Petroleum Sites Management Section
Agency of Natural Resources
103 South Main Street
Waterbury, VT 05676

RE: Brown's Sales and Service
Windsor, VT

Dear Mr. Coleman:

Attached please find the completed Site Assessment and Tank Pull forms required by your office for the underground storage tank (UST) excavation conducted at the above noted site.

As noted, this excavation which was conducted on November 24 1992, involved the removal of four (4) gasoline USTs. Once removed from the excavation, each tank was inspected and all were found to be generally rusty. Additionally, one excavated tank (No. 3) was found to exhibit some pitting, and one hole was identified on tank no 2.

The final excavation measured approximately 18 feet X 27 feet with an approximate depth of 9 feet. As illustrated on the site map provided, a PID survey of the excavation revealed organic vapor readings ranging from 3.5 PPM to a peak of 233 PPM. The average of all PID readings collected from within the excavation was 80 PPM.

In an attempt to delineate the relative extent of contamination associated with these tanks, and simultaneously address the area intended for the replacement tank, two (2) test pits were excavated and screened for contamination in the area of the pump island. The test pit installed to the east of the island revealed PID readings of 33 to 42 ppm at a depth of approximately 6 feet. The second test pit, located west of the pump island revealed elevated PID readings which increased with depth as follows:

Depth	PID reading
2-4 feet	19.8 ppm
8-10 feet	46.8 ppm
11-12 feet	86 ppm

NEIM

802-863-8714
Fax 802-863-1022

Mr. M. Coleman
November 30, 1992
Page 2

The approximate locations of both test pits are illustrated on the Site Diagram provided. An approximate quantity of 96 cubic yards of soil exhibiting relative hydrocarbon levels (based on PID readings) above 20 PPM was excavated from the excavation and subsequently stockpiled on site. This material, which remains on-site, was stockpiled on and covered by plastic. Currently this soil awaits appropriate off-site treatment in accordance with agency guidelines.

It is noted that during the course of the this excavation, which was conducted by Vicon of Fitzwilliam, New Hampshire, an estimated quantity of approximately 2 to 3 gallons of gasoline product was inadvertently released to standing water (i.e. puddles) present on the site. This material was immediately contained with sorbent material, and the entire spill was cleaned-up by NEIM in approximately 20 minutes. Due to the relatively small amount of material released, and the short period of time which lapsed between release and recovery, no impacts can be attributed to this release.

If you have any questions regarding the enclosed forms or information, please do not hesitate to contact me. I can be reached at 863-8714.

Thank you,

NEW ENGLAND INDUSTRIAL MAINTENANCE, INC.

Jennifer von Rohr
Jennifer von Rohr
Environmental Scientist

cc: Ken Brown, Brown's Sales and Service
Tom Frawley, R.L. Vallee, Inc.

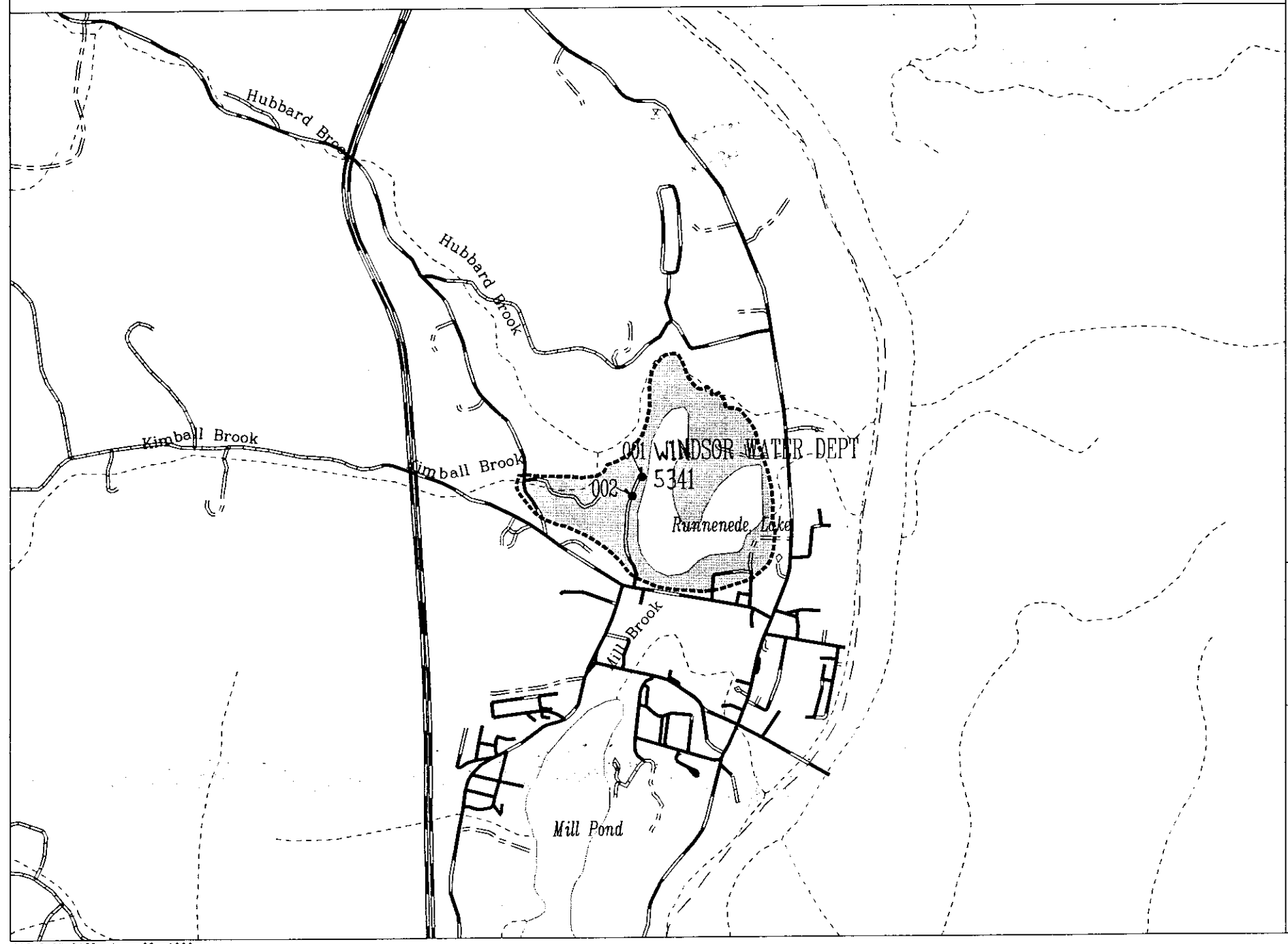
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Appendix D

Source Protection Areas

SOURCE PROTECTION AREAS

WINDSOR WATER DEPT: 5341 - TOPO 46D46B47A

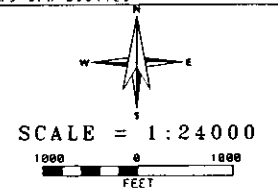
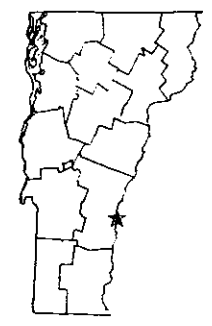


- Surface Water
- ▨ Wetlands
- ▤ Heavy Duty
- ▥ Medium Duty
- ▦ Light Duty
- ▧ Unimproved/Unknown
- Source Well
- ◆ Source Spring
- ◇ Surface Source
- ◊ Proposed Source
- ▨ WHPA
- ▤ WHPAs & SPAs
- 50 Foot Contours
- ▤ Streams
- ▤ Town Boundary

WATER SUPPLY GEOGRAPHIC INFORMATION SYSTEM
 PUBLISHER: DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 WATER SUPPLY DIVISION

COORD SYSTEM: STATE PLANE COORDINATE SYSTEM (NAD27)
 SOURCES: ROADS = 1:5000 ORTHOPHOTOS 1974-90
 CONTOURS = 7.5 MIN USGS DEM DATA
 STREAMS = 1:100000 DLG DATA
 LAKES, PONDS, WETLANDS = 1:100000 DLG DATA
 WHPA & SPA = 1:24000 USGS BASE 1995
 TOWN BND = 1:24000 USGS BASE
 WATER SOURCES = 1:24000 USGS & GPS 1994

SYSTEM: WSD-WAPPER
 PLOT PATH: -WSD2-WSDSHR2-SPAREAS-PLOTS-SPA-W5341LG



THIS MAP IS BASED ON THE ABOVE SOURCES OF DATA FROM VCGI. REFERENCE SHOULD BE MADE TO THE VCGI DATA CATALOG FOR INFORMATION ON THE LIMITATIONS OF THE MAP DATA.

CREATION DATE: June 02, 1998

Appendix E

Soils Information

Windsor County Soil Survey Map Unit Descriptions

This unit is well suited to cultivated crops. The main concern is the seasonal high water table. Spring tillage may be delayed in some years because of wetness. Cold soil temperatures due to wetness can slow germination. Subsurface drainage can be used to lower the water table in areas with suitable outlets.

The potential productivity for eastern white pine on this unit is very high. It has few limitations for woodland use and management.

The seasonal high water table limits this unit as a site for dwellings with basements. Installing footing drains, sealing foundations and grading the land to divert surface water away from the dwelling will help to prevent wet basements. Low-lying areas of this unit along streams may be in the 100-year flood zone and are subject to brief flooding under extreme weather conditions.

The seasonal high water table limits this unit as a site for septic tank absorption fields. On-site monitoring of the water table is often required to establish the suitability of this unit. Mound systems are normally specified on this unit, once it is determined to be acceptable as a site.

This unit is in agricultural capability subclass 2w and hydrologic group B.

2B Belgrade silt loam, 3 to 8 percent slopes

This unit consists of very deep, moderately well drained soils. It is on gently sloping terraces.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layer:

Surface to 8 inches, dark brown silt loam

Subsoil:

8 to 28 inches, mottled, brown silt loam

28 to 36 inches, mottled, dark yellowish brown silt loam

Substratum:

36 to 65 inches, mottled, olive gray silt loam with lenses of fine sand

Included in the mapping of this unit are areas of poorly drained Raynham soils, well drained Hitchcock soils, and soils with sandy layers. The Raynham soils are in depressions and drainageways and the Hitchcock soils are on knolls. The soils with sandy layers are in positions similar to the Belgrade soils. These areas make up about 15 percent of the unit. Low-lying areas of this unit along streams may be in the 100-year flood zone and are subject to brief flooding under extreme weather conditions.

Important soil properties

Permeability: moderate over slow to moderately rapid

Available water capacity: high

January 1998 Draft Report - Subject to Change

Depth to bedrock: greater than 60 inches
Depth to seasonal high water table: 1.5 to 3.5 feet
Potential frost action: high

Most areas of this unit are used for hay and pasture or cultivated crops. Other areas are developed or are in woodland.

This unit is well suited to hay and pasture. The seasonal high water table is a limitation. Wetness can limit the choice of plants and the period of cutting or grazing and increase the risk of winterkill. Using rotational grazing, limiting access during wet periods and maintaining soil fertility levels help to promote a good stand of hay and forage plants.

This unit is well suited to cultivated crops. The main concern is the hazard of erosion. Including grasses and legumes in the crop rotation, using a conservation tillage system that leaves crop residue on the surface and tilling across the slope are common practices that help to control erosion. The seasonal high water table is also a concern. Spring tillage may be delayed in some years because of wetness. Cold soil temperatures due to wetness can slow germination. Subsurface drainage can be used to lower the water table in areas with suitable outlets.

The potential productivity for eastern white pine on this unit is very high. It has few limitations for woodland use and management.

The seasonal high water table limits this unit as a site for dwellings with basements. Installing footing drains, sealing foundations and grading the land to divert surface water away from the dwelling will help to prevent wet basements. Low-lying areas of this unit along streams may be in the 100-year flood zone and are subject to brief flooding under extreme weather conditions.

The seasonal high water table limits this unit as a site for septic tank absorption fields. On-site monitoring of the water table is often required to establish the suitability of this unit. Mound systems are normally specified on this unit, once it is determined to be acceptable as a site.

This unit is in agricultural capability subclass 2e and hydrologic group B.

3 Pits, quarries-dumps, mine complex

This unit consists of open, steep-sided excavations from which soil and the underlying bedrock have been removed. The remaining material is waste rock and bedrock exposures that support little or no vegetation. The type of bedrock exposed varies with the location in the survey area and includes dolomite, gneiss, granite, phyllite, schist, soapstone and talc.

RECREATIONAL DEVELOPMENT (B)

CAMP AREAS	0-6%: MODERATE-WETNESS 8-15%: MODERATE-SLOPE, WETNESS 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-WETNESS 2-6%: MODERATE-SLOPE, WETNESS 6+%: SEVERE-SLOPE
PICNIC AREAS	0-6%: MODERATE-WETNESS 8-15%: MODERATE-SLOPE, WETNESS 15+%: SEVERE-SLOPE	PATHS AND TRAILS	SEVERE-ERODES EASILY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE	CAPABILITY		CORN SILAGE (TONS)		CORN, SWEET (TONS)		ALFALFA HAY (TONS)		GRASS-LEGUME HAY (TONS)		GRASS-CLOVER (AUM)			
	NERR	IRR	NERR	IRR	NERR	IRR	NERR	IRR	NERR	IRR	NERR	IRR	NERR	IRR
0-3%	2W		24		8.3		4.3		4.0		7.5			
3-6%	2E		22		6.0		4.0		3.5		7.5			
8-15%	3E		22		6.0		4.0		3.5		6.5			

WOODLAND SUITABILITY (C)

CLASS- DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		TREES TO PLANT	
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT.	WINDTH HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	PROD CLAS
0-6%	1A	SLIGHT	SLIGHT	SLIGHT	SLIGHT	MODER.	NORTHERN RED OAK	42	3
8-15%	2R	MODER.	MODER.	SLIGHT	SLIGHT	MODER.	EASTERN WHITE PINE	75	10
15-25%	3R	MODER.	MODER.	SLIGHT	SLIGHT	MODER.	WHITE SPRUCE	48	10

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY (D)

CLASS- DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDW. TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SWALLOW WATER	OPENLD WILDLF	WOODLD WILDLF
0-3%	GOOD	GOOD	GOOD	GOOD	GOOD	-	POOR	POOR	GOOD	GOOD
3-15%	FAIR	GOOD	GOOD	GOOD	GOOD	-	V. POOR	V. POOR	GOOD	GOOD
15-25%	POOR	FAIR	GOOD	GOOD	GOOD	-	V. POOR	V. POOR	FAIR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSFN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE			
		0-3%	3-15%	15-25%	25-40%
HARDHACK	SP00				
GOLDENROD	S010				
OLD-FIELD JUNIPER	JUC00+				
EASTERN WHITE PINE	P15T				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS					
NORMAL YEARS					
UNFAVORABLE YEARS					

FOOTNOTES

- A ESTIMATES BASED ON TEST DATA FROM TWO PEDONS FROM MASSACHUSETTS.
 B RATINGS BASED ON CRITERIA IN NSH PART 2, SEC. 403, MARCH 31, 1978.
 C RATINGS BASED ON NATIONAL FORESTRY MANUAL.
 D RATINGS BASED ON SOILS MEMOS JAN. 1972.

RECREATIONAL DEVELOPMENT (B)															
CAMP AREAS	0-8%: MODERATE-TOO SANDY 8-15%: MODERATE-SLOPE, TOO SANDY 15+%: SEVERE-SLOPE					PLAYGROUNDS					0-2%: MODERATE-TOO SANDY 2-6%: MODERATE-SLOPE, TOO SANDY 6+%: SEVERE-SLOPE				
PICNIC AREAS	0-8%: MODERATE-TOO SANDY 8-15%: MODERATE-SLOPE, TOO SANDY 15+%: SEVERE-SLOPE					PATHS AND TRAILS					0-15%: MODERATE-TOO SANDY 15-25%: MODERATE-TOO SANDY, SLOPE 25+%: SEVERE-SLOPE				

CLASS- DETERMINING PHASE	CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)											
	CAPA- BILITY		CORN SILAGE (TONS)		ALFALFA HAY (TONS)		GRASS- LEGUME HAY (TONS)		GRASS HAY (TONS)		GRASS- CLOVER (AUM)	
	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR
0-6%	35	14	14	3.0	2.5	2.0	2.0	5.5				
8-15%	45	12	12	3.0	2.5	2.0	2.0	5.0				
15-25%	65	-	-	2.5	2.0	-	-	4.5				
25+%	75	-	-	-	-	-	-	-				

CLASS- DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS						POTENTIAL PRODUCTIVITY				TREES TO PLANT
		EROSION HAZARD	EQUIP LIMIT	SEEDLING MORTALITY	WIND HAZARD	PLANT COMPET	COMMON TREES		SITE INDEX	PROD CLASS		
							COMMON TREES					
0-15%	75	SLIGHT	SLIGHT	SEVERE	SLIGHT	SLIGHT	EASTERN WHITE PINE	57	7	EASTERN WHITE PINE		
15-25%	75	MODER.	MODER.	SEVERE	SLIGHT	SLIGHT	NORTHERN RED OAK	52	2	RED PINE		
25+%	75	SEVERE	SEVERE	SEVERE	SLIGHT	SLIGHT	RED PINE	61	7	NORWAY SPRUCE		
	75						SUGAR MAPLE	55	2			

CLASS-DETERMINING PHASE	SPECIES	HT	WINDBREAKS			
			SPECIES	HT	SPECIES	HT
NONE						

CLASS- DETERMINING PHASE	WILDLIFE HABITAT SUITABILITY (D)											
	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWOOD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLF	WOODLAND WILDLF	WETLAND WILDLF	RANGELAND WILDLF
0-25%	POOR	POOR	FAIR	POOR	POOR	-	V. POOR	V. POOR	POOR	POOR	V. POOR	-
25+%	V. POOR	POOR	FAIR	POOR	POOR	-	V. POOR	V. POOR	POOR	POOR	V. POOR	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)	
COMMON PLANT NAME	PLANT SYMBOL (NLSYM)
NORTHERN BAYBERRY	MYB2
LOWBUSH BLUEBERRY	YAN
MOUNTAIN LAUREL	KAL
GROUNDCEDAR	LYCQ
SPOTTED WINTERGREEN	CHMA
HAIKY MOSS	POLY

POTENTIAL PRODUCTION (LBS./AC. DRY WT.):	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE			
FAVORABLE YEARS				
NORMAL YEARS				
UNFAVORABLE YEARS				

FOOTNOTES
 A. ESTIMATES OF ENGINEERING PROPERTIES BASED ON TEST DATA FROM 7 PEDONS.
 B. RATINGS BASED ON NATIONAL SOILS HANDBOOK, PART 803, JULY 1963.
 C. RATINGS BASED ON NATIONAL FORESTRY MANUAL, SEPT. 1980.
 D. RATINGS BASED ON SOILS MEMORANDUM 74, JAN. 1972.
 * SITE INDEX IS A SUMMARY OF 5 OR MORE MEASUREMENTS ON THIS SOIL.

SOIL SURVEY MAP UNIT LEGEND - WINDSOR COUNTY, VERMONT
JANUARY 1998

NOTE: S OR P = PRIMARY AGRICULTURAL SOIL UNDER ACT 250

b - denotes prime (P) or statewide (S) ag soil only where drained

H = HYDRIC (WETLAND) SOIL

THIS LEGEND IS SUBJECT TO CHANGE AT ANY TIME. PLEASE CALL WHITE RIVER NRCS OFFICE FOR MORE INFORMATION (802-295-1662).

MAPPING SYMBOL	FIELD MAPPING UNIT NAME	PRIME FARMLAND	WET LAND	AGRIC. CAPAB. SUBCLASS	FOREST VALUE GROUP	HYDRO. GROUP	K VALUE	T VALUE
1B	Hitchcock sil, 3-8%	S		Ile	1	B	.49	3
1C	Hitchcock sil, 8-15%	S		IIle	1	B	.49	3
1D	Hitchcock sil, 15-25%			IVe	1	B	.49	3
1E	Hitchcock sil, 25-50%, moderately eroded			Vile	3	B	.49	3
2A	Belgrade sil, 0-3%	P		IIfw	3	B	.49	3
2B	Belgrade sil, 3-8%	S		Ile	3	B	.49	3
3	Pits, quarries-dumps, mine complex			VIIIs	NR	-		
4A	Raynham sil, 0-3%	P-b	H	IVw	6	C	.49	3
5A	Combined with 5B							
5B	Windsor lfs, 0-8%	S		IIIs	2	A	.17	5
5C	Windsor lfs, 8-15%			IVs	2	A	.17	5
5D	Windsor lfs, 15-25%			VIIs	3	A	.17	5
5E	Windsor lfs, 25-60%			VIIIs	3	A	.17	5
8A	Agawam fsl, 0-3%	P		I	2	B	.28	3
8B	Agawam fsl, 3-8%	P		IIe	2	B	.28	3
8C	Combined with 8B							
9A	Combined with 9B							
9B	Ninigret fsl, 0-8% (Combined w/71B:Weston+Andover)	P		IIfw	1	B	.28	3
9C	Combined with 9B							
10B	Combined with 17B							
10C	Marlow fsl, 8-15%	S		IIle	2	C	.24	3
10D	Marlow fsl, 15-25%			IVe	3	C	.24	3
11B	Combined with 18B							
11C	Marlow fsl, 8-15%, STV			VIIs	3	C	.20	3
11D	Marlow fsl, 15-35%, STV			VIIs	4	C	.20	3
11E	Marlow fsl, 35-60%, STV			VIIIs	5	C	.20	3
12C	Tunbridge-Lyman complex, 8-15%, VRKY			VIIs	5	C/D	.20	2
12D	Tunbridge-Lyman complex, 15-35%, VRKY			VIIIs	5	C/D	.20	2
12E	Tunbridge-Lyman complex, 35-60%, VRKY			VIIIs	6	C/D	.20	2
14A	Combined with 14B							
14B	Hinckley lfs, 0-8%	S		IIIs	2	A	.17	3
14C	Hinckley lfs, 8-15%			IVs	2	A	.17	3
14D	Hinckley lfs, 15-25%			VIIs	3	A	.17	3
14E	Hinckley lfs, 25-50%			VIIIs	3	A	.17	3
15B	Dummerston fsl, 3-8%	P		Ile	2	B	.32	3
15C	Dummerston fsl, 8-15%	S		IIle	2	B	.32	3
15D	Dummerston fsl, 15-25%			IVe	3	B	.32	3
16B	Combined with 16C							
16C	Dummerston fsl, 8-15%, STV			VIIs	3	B	.28	3
16D	Dummerston fsl, 15-35%, STV			VIIs	4	B	.28	3
16E	Dummerston fsl, 35-60%, STV			VIIIs	5	B	.28	3
17B	Peru and Skerry fsl, 3-8%	P		Ile	2	C	.24	3
17C	Peru and Skerry fsl, 8-15%	S		IIle	2	C	.24	3
17D	Peru and Skerry fsl, 15-25%			IVe	3	C	.24	3
18B	Peru and Skerry fsl, 3-8%, STV			VIIs	3	C	.20	3
18C	Peru and Skerry fsl, 8-15%, STV			VIIs	3	C	.20	3
18D	Peru and Skerry fsl, 15-35%, STV			VIIs	4	C	.20	3

19B	Vershire-Dummerston complex, 3-8%, RKY	P		Ile	2	C/B	.32	2/3
19C	Vershire-Dummerston complex, 8-15%, RKY	S		IIle	2	C/B	.32	2/3
19D	Vershire-Dummerston complex, 15-25%, RKY			IVe	3	C/B	.32	2/3
19E	Vershire-Dummerston complex, 25-60%, RKY			VIs	5	C/B	.28	2/3
20C	Glover-Vershire complex, 3-15%, VRKY			IIIe	4	C/D	.28	2
20D	Glover-Vershire complex, 15-35%, VRKY			Vle	5	C/D	.28	2
20E	Glover-Vershire complex, 35-60%, VRKY			VIs	5	C/D	.24	2
21B	Shelburne fsl, 3-8%	P		Ile	1	C	.28	3
21C	Shelburne fsl, 8-15%	S		IIle	1	C	.28	3
21D	Shelburne fsl, 15-25%			IVe	1	C	.28	3
22B	Shelburne fsl, 3-8%, STV			VIs	1	C	.20	3
22C	Shelburne fsl, 8-15%, STV			VIs	1	C	.20	3
22D	Shelburne fsl, 15-35%, STV			VIs	2	C	.20	3
22E	Combined with 26E							
23	Ondawa fsl, 0-3%	P		I	4	B	.24	5
24	Podunk fsl, 0-3%	P		IIw	2	B	.24	5
25B	Buckland fsl, 3-8%	P		IIw	3	C	.32	3
25C	Buckland fsl, 8-15%	S		IIIe	3	C	.32	3
25D	Buckland fsl, 15-25%			IVe	3	C	.32	3
26B	Buckland fsl, 3-8%, STV			VIs	3	C	.28	3
26C	Buckland fsl, 8-15%, STV			VIs	3	C	.28	3
26D	Buckland fsl, 15-35%, STV			VIs	4	C	.28	3
26E	Buckland fsl, 35-60%, STV			VIs	4	C	.28	3
28	Udorthents and Udipsanments			VIIIIs	NR			
29A	Grange vfsl, 0-3%	P-b	H	IVw	6	C	.43	3
30A	Combined with 30B							
30B	Cabot lm, 0-8%	S-b	H	Vw	5	D	.32	3
30C	Cabot lm, 8-15%	S-b	H	IIIe	5	D	.32	3
31A	Combined with 31B							
31B	Cabot lm, 0-8%, STV		H	VIs	5	D	.28	3
31C	Cabot lm, 8-15%, STV		H	VIs	5	D	.28	3
32B	Urban Land-Windsor-Agawam complex, 0-8%			VIIIIs	NR	D or B		
33	Rumney fsl, 0-2%	S-b	H	IIIw	5	C	.24	5
36C	Teago-Pomfret cplx, 8-15%, RKY	S		IIIe	4	A	.24/.17	2/5
36D	Teago-Pomfret cplx, 15-25%, RKY			IVe	4	A	.24/.17	2/5
36E	Teago-Pomfret cplx, 25-50%, RKY			VIIe	5	A	.24/.17	2/5
38	Hadley vfsl, 0-3%	P		I	1	B	.49	5
39	Winooski sil, 0-3%	P		IIw	1	B	.49	5
40	Limerick sil, 0-2%	S-b	H	IVw	6	C	.49	5
41	Saco sil, 0-2%		H	VIw	NR	D	.49	5
42D	Lyman-Rock Outcrop complex, 15-35%, STV			VIIe	6	D	.20	2
42E	Combined with 42F							
42F	Lyman-Rock Outcrop complex, 35-70%, STV			VIs	6	D	.20	2
43C	Combined with 62C							
43D	Hogback-Rock Outcrop-Rawsonville complex, 15-35%, BYV			VIs	6	D	.43	2
43F	Hogback-Rock Outcrop-Rawsonville complex, 35-70%, BYV			VIs	6	D	.43	2
45B	Eldridge fsl, 3-8%	P		IIw	1	C	.24	3
45C	Eldridge fsl, 8-15%	S		IIIe	1	C	.24	3
45D	Eldridge fsl, 15-25%			IVe	2	C	.24	3
45E	Eldridge fsl, 25-50%			VIIe	3	C	.24	3
47	Markey and Wonsqueak mucks		H	VIw	NR	D	---	4
48	Pits, sand and pits, gravel			VIs	NR	-		

49B	Vershire-Buckland complex, 3-8%	P	Ile	2	C	.32	2/3
49C	Vershire-Buckland complex, 8-15%	S	IIle	2	C	.32	2/3
49D	Vershire-Buckland complex, 15-25%		IVe	3	C	.32	2/3
50B	Combined with 10B above 1000 ft. and 21B below 1000 ft.						
50C	Combined with 10C above 1000 ft. and 21C below 1000 ft.						
50D	Combined with 10D above 1000 ft. and 21D below 1000 ft.						
51B	Combined with 11B above 1000 ft. and 22B below 1000 ft.						
51C	Combined with 11C above 1000 ft. and 22C below 1000 ft.						
51D	Combined with 11D above 1000 ft. and 22D below 1000 ft.						
51E	Combined with 11E above 1000 ft. and 22E below 1000 ft.						
52B	Combined with 25B						
52C	Combined with 25C						
52D	Combined with 25D						
53B	Combined with 26B						
53C	Combined with 26C						
53D	Combined with 26D						
54B	Tunbridge-Lyman complex, 3-8%, RKY	S	Ile	4	C/D	.24/.28	2
54C	Tunbridge-Lyman complex, 8-15%, RKY	S	IIle	4	C/D	.24/.28	2
54D	Tunbridge-Lyman complex, 15-25%, RKY		IVe	4	C/D	.24/.28	2
56	Carbondale muck	H	VIW	NR	D	---	5
57	Peacham muck, 0-3%	H	VW	NR	D	---	--
58C	Berkshire-Tunbridge complex, 8-15%, STV		Vis	3	B/C	.20	3/2
58D	Berkshire-Tunbridge complex, 15-35%, STV		Vis	4	B/C	.20	3/2
58E	Berkshire-Tunbridge complex, 35-50%, STV		VIIIs	5	B/C	.20	3/2
59C	Rawsonville-Houghtonville complex, 8-15%, RKY		Vis	2	C	.43	2/3
59D	Rawsonville-Houghtonville complex, 15-35%, RKY		Vis	3	C	.43	2/3
59E	Rawsonville-Houghtonville complex, 35-60%, RKY		VIIIs	4	C	.43	2/3
60D	Glebe-Stratton complex, 15-35%, STV		VIIIs	NR	C	.43	2
60E	Combined with 60F						
60F	Glebe-Stratton complex, 35-70%, STV		VIIIs	NR	C	.43	2
61D	Ricker-Londonderry-Stratton complex, 15-35%, VRKY		VIIIs	NR	A-C/D	.43	1/2
61E	Combined with 61F						
61F	Ricker-Londonderry-Stratton complex, 35-70%, VRKY		VIIIs	NR	A-C/D	.43	1/2
62C	Hogback-Rawsonville complex, 8-15%, VRKY		Vis	5	C/D	.43	2
62D	Hogback-Rawsonville complex, 15-35%, VRKY		VIIIs	5	C/D	.43	2
62E	Hogback-Rawsonville complex, 35-60%, VRKY		VIIIs	6	C/D	.43	2
62F	Combined with 62E						
63C	Berkshire and Monadnock fsl, 8-15%, STV		Vis	3	B	.20/.24	3
63D	Berkshire and Monadnock fsl, 15-35%, STV		Vis	4	B	.20/.24	3
63E	Berkshire and Monadnock fsl, 35-60%, STV		VIIIs	5	B	.20/.24	3
64B	Colton fsl, 3-8%	S	IIIs	2	A	.24	3
64C	Colton fsl, 8-15%		IVe	2	A	.24	3
64D	Colton fsl, 15-25%		VIe	3	A	.24	3
64E	Colton fsl, 25-60%		VIIe	3	A	.24	3
65B	Combined with 68B						
65C	Combined with 68C						
65D	Combined with 68D						
68B	Berkshire and Monadnock fsl, 3-8%	P	Ile	2	B	.28	3
68C	Berkshire and Monadnock fsl, 8-15%	S	IIle	2	B	.28	3
68D	Berkshire and Monadnock fsl, 15-25%		IVe	3	B	.28	3
68E	Combined with 63E						
70B	Adams lfs, 3-8%	S	IIIs	2	A	.17	5
70C	Adams lfs, 8-15%		IVe	2	A	.17	5
70D	Adams lfs, 15-25%		VIe	3	A	.17	5
70E	Adams lfs, 25-60%		VIIe	3	A	.17	5

71B	Croghan and Sheepscot fsl, 0-8%	P	IIw	1	B	.17	5/3
71C	Croghan and Sheepscot fsl, 8-15%	S	IIle	1	B	.17	5/3
74C	Mundal fsl, 8-15%, STV		VI s	2	C	.43	3
74D	Mundal fsl, 15-35%, STV		VI s	3	C	.43	3
75B	Urban Land-Colton-Croghan complex, 0-8%		VIIIs	NR			
77B	Colonel fsl, 3-8%	S	IIIw	5	C	.20	3
77C	Colonel fsl, 8-15%	S	IIIe	5	C	.20	3
77D	Colonel fsl, 15-25%		IVe	5	C	.20	3
78B	Colonel fsl, 3-8%, STV		VI s	5	C	.17	3
78C	Colonel fsl, 8-15%, STV		VI s	5	C	.17	3
78D	Colonel fsl, 15-35%, STV		VI s	6	C	.17	3
79C	Dummerston-Macomber cplx, 8-15%, STV		VI s	3	B/C	.28/.24	3/2
79D	Dummerston-Macomber cplx, 15-25%, STV		VI s	4	B/C	.28/.24	3/2
79E	Dummerston-Macomber cplx, 25-70%, STV		VII s	5	B/C	.28/.24	3/2
80C	Macomber-Taconic cplx, 8-15%, VRKY		VI s	4	C-C/D	.24	2/1
80D	Macomber-Taconic cplx, 15-25%, VRKY		VI s	5	C-C/D	.24	2/1
80E	Macomber-Taconic cplx, 25-70%, VRKY		VII s	5	C-C/D	.24	2/1
81D	Taconic-Hubbardton-Rock outcrop cplx, 8-25%		VII s	6	C/D	.24	1
81E	Taconic-Hubbardton-Rock outcrop cplx, 25-70%		VII s	6	C/D	.24	1
82	Udifuvents, sandy-skeletal		Vs	NR	A	.15	1
85B	Fullam sil, 3-8%	P	IIe	3	C	.32	3
85C	Fullam sil, 8-15%	S	IIIe	3	C	.32	3
85D	Fullam sil, 15-25%		IVe	3	C	.32	3
86B	Fullam sil, 3-8%, STV		VI s	3	C	.28	3
86C	Fullam sil, 8-15%, STV		VI s	3	C	.28	3
86D	Fullam sil, 15-35%, STV		VI e	4	C	.28	3
86E	Fullam sil, 35-50%, STV		VII s	5	C	.28	3
89B	Dummerston-Macomber cplx, 3-8%, RKY	S	IIe	2	B/C	.32	3/2
89C	Dummerston-Macomber cplx, 8-15%, RKY	S	IIIe	2	B/C	.32	3/2
95B	Nicholville-Adams cplx, 3-8%	S	IIe	1	C/A	.49/.17	5
95C	Nicholville-Adams cplx, 8-15%	S	IIIe	1	C/A	.49/.17	5
95D	Nicholville-Adams cplx, 15-25%		IVe	2	C/A	.49/.17	5
95E	Nicholville-Adams cplx, 25-60%		VIIe	3	C/A	.49/.17	5
W	Water						

USDA Texture Abbreviations: (refers to texture of surface layer)

c	Clay	sic	Silty Clay
cl	Clay Loam	sicl	Silty Clay Loam
fs	Fine Sand	sil	Silt Loam
fsl	Fine Sandy Loam	sl	Sandy Loam
gr	Gravelly	vfs	Very Fine Sand
l	Loam	vysl	Very Fine Sandy Loam
lfs	Loamy Fine Sand		
s	Sand		

Map Unit Modifiers:

Boulders	> 24 inches diameter
Stones	10 to 24 inches diameter
Cobbles	3 inches to 10 inches diameter
Channers	flat fragments, < 6 inches long
→ byv	Very Bouldery (0.1 to 3.0 percent of surface covered with boulders)
→ stv	Very Stony (0.1 to 3.0 percent of surface covered with stones)
→ rky	Rocky (less than 1 percent rock outcrop)
→ vrky	Very Rocky (1 to 3 percent rock outcrop)

Soil Survey Area: Windsor County
State: Vermont

CONVENTIONAL AND SPECIAL nty____ SYMBOLS LEGEND

Date: 11/88

[illegible]

Appendix F

Borings Logs/Well Construction Logs

M & W Soils Engineering Inc.

Main St.

Charlestown, NH 03603

TO DSM ENVIRONMENTAL SERVICES

ADDRESS ASCUTNEY, VT

PROJECT NAME BROWN'S GARAGE

LOCATION WINDSOR, VT

REPORT SENT TO TED REEVES

PROJ. NO. _____

SAMPLES RETAINED BY DSM ENVIRONMENTAL

OUR JOB NO. 7398-98

SHEET 1 OF 1

DATE 4/27/98

HOLE NO. MW-1

LINE & STA. _____

OFFSET _____

GROUND WATER OBSERVATIONS		Type Size I. D. Hammer Wt. Hammer Fall	CASING HSA 4 1/4"	SAMPLER SS 1 1/2" 140# 30"	CORE BAR BIT	SURFACE ELEV. _____
AT <u>10'3"</u>	AT <u>2</u> HOURS					DATE STARTED <u>4/27/98</u>
AT _____	AT _____ HOURS					DATE COMPL. <u>4/27/98</u>
						BORING FORMAN <u>M.D. & M.H.</u>
						INSPECTOR _____
						SOILS ENGR. _____

LOCATION OF BORING INSIDE GATE TO SALVAGE YARD, NORTH OF ENTRANCE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness. Drilling time, seams and ecl	SAMPLE		
								NO.	PEN	REC
5'					MED. DENSE	2'	BROWN FINE GRAVELS WITH COARSE SANDS HNA = ϕ			
	4'6" - 6'6"	SS	7	8	MED. TO LOOSE		BROWN SILT WITH FINE SANDS	1	24"	23"
			8	7						
	6'6" - 8'6"	SS	5	5				2	24"	24"
10'			4	4		8'	HNA = ϕ			
	10' - 12'	SS	1	2	WET			3	24"	23"
			1	2						
					LOOSE		BROWN FINE SAND WITH SOME SILT			
15'	15' - 17'	SS	3 BLOWS			17'	HNA = ϕ	4	24"	24"
20'							NO BEDROCK TO DEPTH			
							SET 2" PVC WELL AT 15'			
							TOP OF WELL AT 5'			
							SAND TO 36"			
							BENTONITE TO 2'			
							MATERIALS USED:			
							10' OF 2" PVC 0.010" SLOT SCREEN			
							5' OF 2" PVC SOLID			
							25# OF BENTONITE CHIPS			
							250# OF SAND			
							40# OF CEMENT MIX			
							1 2" EXPANSION CAP			
							1 2" PVC CAP			
							1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 17'

USED HSA

CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used

trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense
Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary

EARTH BORING 17'

ROCK CORING _____

SAMPLES 4

HOLE NO. MW-1

M & W Soils Engineering Inc.

Main St.

Charlestown, NH 03603

SHEET 1 OF 1
DATE 4/27/98
HOLE NO. MW-4
LINE & STA.
OFFSET

TO DSM ENVIRONMENTAL SERVICES

ADDRESS ASCUTNEY, VT

PROJECT NAME BROWN'S GARAGE

LOCATION WINDSOR, VT

REPORT SENT TO TED REEVES

PROJ. NO.

SAMPLES RETAINED BY DSM ENVIRONMENTAL

OUR JOB NO. 7398-98

GROUND WATER OBSERVATIONS		CASING		SAMPLER	CORE BAR	SURFACE ELEV.
AT 10'4"	AT IMMEDIATELY	HOURS	Type HSA	SS		DATE STARTED 4/27/98
			Size I. D. 4 1/4"	1 1/2"		DATE COMPL. 4/27/98
			Hammer Wt.	140#	BIT	BORING FORMAN M.H. & C.C.
			Hammer Fall	30"		INSPECTOR LINDA
						SOILS ENGR.

LOCATION OF BORING IN PARKING LOT, IN FRONT OF SHOWROOM

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE		
							NO.	PEN	REC
5'	1' - 3'	SS	5	8	2 7/8"	ASPHALT	1	24"	16"
			7	7		BROWN FINE GRAVELS			
						<i>HNU=10 slight odor</i>			
	5' - 7'	SS	3	2	5'	BROWN FINE SAND WITH SOME SILT	2	24"	21"
	7' - 9'	SS	3	2	7'	BROWN CRUSHED STONE WITH MEDIUM SAND (FILL)	3	24"	22"
10'			2	2		<i>same odor 5-7' HNU=35</i>			
	9' - 11'	SS	2	3	9'	BROWN SILT WITH SOME FINE SAND	4	24"	22"
			3	3		<i>same odor 7-9' HNU=40 ppm</i>			
						<i>9-11' HNU=140 green.</i>			
						LOOSE - WET			
15'	15' - 17'	SS	5	4			5	24"	19"
			4	3		<i>STRONG ODOR</i>			
					17'	<i>15-17' HNU=100</i>			
						NO BEDROCK TO DEPTH			
						<i>HNU off auger flights</i>			
20'						SET 2" PVC WELL AT 15'6"			
						TOP OF WELL AT 5'6"			
						SAND TO 3'6"			
						BENTONITE CHIPS TO 2'			
						<i>170-200ppm strong wind helpful.</i>			
						MATERIALS USED:			
						10' OF 2" PVC 0.010" SLOT SCREEN			
						5' OF 2" PVC SOLID			
						25# OF BENTONITE CHIPS			
						250# OF SAND			
						40# OF CEMENT MIX			
						1 2" EXPANSION CAP			
						1 2" PVC CAP			
						1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 17'

USED HSA

CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used

trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary

EARTH BORING 17'

ROCK CORING

SAMPLES 5

HOLE NO. MW-4

M & W Soils Engineering Inc.

Main St.

Charlestown, NH 03603

TO DSM ENVIRONMENTAL SERVICES

ADDRESS ASCUTNEY, VT

PROJECT NAME BROWN'S GARAGE

LOCATION WINDSOR, VT

REPORT SENT TO TED REEVES

PROJ. NO.

SAMPLES RETAINED BY DSM ENVIRONMENTAL

OUR JOB NO. 7398-98

SHEET 1 OF 1

DATE 4/27/98

HOLE NO. MW-3

LINE & STA.

OFFSET

GROUND WATER OBSERVATIONS		CASING SAMPLER CORE BAR		SURFACE ELEV.	
AT 11'	AT IMMEDIATELY	HOURS	Type HSA	SS	
			Size I. D. 4 1/4"	1 1/2"	
			Hammer Wt.	140#	BIT
			Hammer Fall	30"	
			DATE STARTED 4/27/98		
			DATE COMPL. 4/27/98		
			BORING FORMAN M.H. & C.C.		
			INSPECTOR		
			SOILS ENGR.		

LOCATION OF BORING NORTHEAST PART OF MAIN PARKING LOT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE		
							NO.	PEN	REC
5'	1' - 3'	SS	7	6	3"	ASPHALT	1	24"	17"
			7	5					
	5' - 7'	SS	2	1		BROWN SILTY FINE SAND Strong odor off spec.	2	24"	21"
	7' - 9'	SS	2	2			3	24"	16"
	9' - 11'	SS	2	3			4	24"	19"
10'			2	2	9'	BROWN SILT WITH SOME FINE SAND - TRACE OF ORGANICS			
					10'				
15'						LOOSE - WET			
15'	15' - 17'	SS	3	4	15'8"	BROWN FINE SAND - TRACE TO SOME SILT 9-11' HANU: 140 Strong odor from Schiller.	5	24"	18"
			4	4					
20'					17'	MEDIUM TO COARSE SANDS HANU = 100ppm Fumes off auger 40			

GROUND SURFACE TO 17'

USED HSA

CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed
 UP-Unfinished Piston
 TP-Test Pit A-Auger V-Vane Test
 UT-Undisturbed Thinwall

Proportions Used

trace 0 to 10%
 little 10 to 20%
 some 20 to 35%
 and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density

0-10 Loose
 10-30 Med. Dense
 30-50 Dense
 50+ Very Dense

Cohesive Consistency

0-4 Soft 30 + Hard
 4-8 M/Stiff
 8-15 Stiff
 15-30 V-Stiff

summary

EARTH BORING 17'

ROCK CORING

SAMPLES 5

HOLE NO. MW-3

M & W Soils Engineering Inc.

Main St.

Charlestown, NH 03603

SHEET 1 OF 1
DATE 4/27/98
HOLE NO. MW-2
LINE & STA. _____
OFFSET _____

TO DSM ENVIRONMENTAL SERVICES

ADDRESS ASCUTNEY, VT

PROJECT NAME BROWN'S GARAGE

LOCATION WINDSOR, VT

REPORT SENT TO TED REEVES

PROJ. NO. _____

SAMPLES RETAINED BY DSM ENVIRONMENTAL

OUR JOB NO. 7398-98

GROUND WATER OBSERVATIONS		CASING		SAMPLER		CORE BAR		SURFACE ELEV.	
AT <u>11'</u>	AT <u>IMMEDIATELY</u>	HOURS		Type	<u>HSA</u>	<u>SS</u>			
				Size I. D.	<u>4 1/4"</u>	<u>1 1/2"</u>			
				Hammer Wt.	<u>140#</u>	<u>BIT</u>			
				Hammer Fall	<u>30"</u>				
				DATE STARTED		<u>4/27/98</u>			
				DATE COMPL.		<u>4/27/98</u>			
				BORING FORMAN		<u>M.H. & C.C.</u>			
				INSPECTOR		<u>LINDA</u>			
				SOILS ENGR.					

LOCATION OF BORING JUST OFF NORTH END OF BUILDING

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE NO.	PEN	REC
	0' - 2'	SS	5 7				1	24'	17'
			5 4	MED. DENSE	3'	BROWN GRAVELLY SANDS <i>HNU = 0</i>			
5'	5' - 7'	SS	2 2				2	24'	23'
			1 2	LOOSE		BROWN FINE SANDS AND SILTS <i>HNU = 0</i>			
	7' - 9'	SS	2 3				3	24'	24'
			2 2						
	9' - 11'	SS	3 2		9'		4	24'	22'
10'			2 2						
				LOOSE - WET		BROWN MEDIUM SANDS - TRACE OF SILT <i>9-11' HNU = 0</i>			
15'	15' - 17'	SS	7 8		15'		5	24'	21'
			9 12	MED. DENSE WET	17'	BROWN FINE GRAVELS AND COARSE SAND <i>HNU = 45 ppm strong odor stream</i>			
						NO BEDROCK TO DEPTH			
20'						SET 2" PVC WELL AT 15'6" TOP OF WELL AT 5'6" SAND TO 3'5" BENTONITE CHIPS TO 2'			
						MATERIALS USED: 10' OF 2" PVC 0.010" SLOT SCREEN 5' OF 2" PVC SOLID 25# OF BENTONITE CHIPS 250# OF SAND 40# OF CEMENT MIX 1 2" EXPANSION CAP 1 2" PVC CAP 1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 17'

USED HSA CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used

trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohesive Consistency

0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary

EARTH BORING 17'

ROCK CORING _____

SAMPLES 5

HOLE NO. MW-2

Appendix G

Lab Results



eastern analytical

professional laboratory services

Ted Reeves
DSM Environmental Services
Thrasher Road, Rt.5
Ascutney, Vt 05030

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 12377 DSM
Client Identification: Brown's Service & Sales VT
Date Received: 05/06/98
Sample Quantity/Type: 5 aqueous

Dear Mr. Reeves :

Enclosed please find the laboratory report for the above identified project. All analyses were subjected to rigorous quality control measures to assure data accuracy. Unless otherwise stated, all holding times, preservation techniques, container types and sample condition adhered to EPA protocol.

The following standard abbreviations and conventions apply throughout all Eastern Analytical, Inc. reports:

- < = "less than" followed by the detection limit
- TNR = Testing Not Requested
- ND = None Detected, no established detection limit
- BRL = Below Reporting Limits

If you have any questions regarding the results contained within, please feel free to directly contact me, the department supervisor, or the analytical chemist who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Will Brunkhorst (84)
Will Brunkhorst, President

5/6/98
Date



LABORATORY REPORT

Eastern Analytical, Inc. ID#: 12377

Client: DSM Environmental Services

Client Designation: Brown's Service & Sales VT

Volatile Organic Compounds

Client ID:	MW-1	MW-2	MW-3	MW-4	FB-1
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Received:	5/6/98	5/6/98	5/6/98	5/6/98	5/6/98
Date Analyzed:	5/14/98	5/14/98	5/14/98	5/14/98	5/11/98
Analyst:	VG	VG	VG	VG	VG
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Method:	8021	8021	8021	8021	8021
Dilution Factor:	1	1	1,000	1,000	1
Chloromethane	< 10	< 10	< 10,000	< 10,000	< 10
Vinyl chloride	< 2	< 2	< 2,000	< 2,000	< 2
Bromomethane	< 10	< 10	< 10,000	< 10,000	< 10
Chloroethane	< 10	< 10	< 10,000	< 10,000	< 10
1,1-Dichloroethene	< 1	< 1	< 1,000	< 1,000	< 1
Methylene chloride	< 2	< 2	< 2,000	< 2,000	< 2
trans-1,2-Dichloroethene	< 2	< 2	< 2,000	< 2,000	< 2
1,1-Dichloroethane	< 2	< 2	< 2,000	< 2,000	< 2
cis-1,2-Dichloroethene	< 2	< 2	< 2,000	< 2,000	< 2
Chloroform	< 2	< 2	< 2,000	< 2,000	< 2
1,1,1-Trichloroethane	< 2	< 2	< 2,000	< 2,000	< 2
Carbon tetrachloride	< 2	< 2	< 2,000	< 2,000	< 2
1,2-Dichloroethane	< 2	< 2	< 2,000	< 2,000	< 2
Trichloroethene	< 2	< 2	< 2,000	< 2,000	< 2
1,2-Dichloropropane	< 2	< 2	< 2,000	< 2,000	< 2
Bromodichloromethane	< 2	< 2	< 2,000	< 2,000	< 2
cis-1,3-Dichloropropene	< 2	< 2	< 2,000	< 2,000	< 2
trans-1,3-Dichloropropene	< 2	< 2	< 2,000	< 2,000	< 2
1,1,2-Trichloroethane	< 2	< 2	< 2,000	< 2,000	< 2
Tetrachloroethene	< 2	< 2	< 2,000	< 2,000	< 2
Dibromochloromethane	< 2	< 2	< 2,000	< 2,000	< 2
Chlorobenzene	< 2	< 2	< 2,000	< 2,000	< 2
Bromoform	< 2	< 2	< 2,000	< 2,000	< 2
1,1,2,2-Tetrachloroethane	< 2	< 2	< 2,000	< 2,000	< 2
MTBE	< 10	50	< 10,000	20,000	< 10
Benzene	< 1	22	29,000	54,000	< 1
Toluene	< 1	100	53,000	82,000	< 1
Ethylbenzene	< 1	150	4,000	6,000	< 1
m,p-Xylene	< 1	150	15,000	26,000	< 1
o-Xylene	< 1	29	4,000	7,000	< 1

Approved By Clifford Chase, Volatile Organics Supervisor

Clifford Chase 5/20/98



LABORATORY REPORT

Eastern Analytical, Inc. ID#: 12377

Client: DSM Environmental Services

Client Designation: Brown's Service & Sales VT

Sample ID:	MW-1	MW-2	MW-3	MW-4	FB-1
Analytical Type:	Sample	Sample	Sample	Sample	Sample
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	5/5/98	5/5/98	5/5/98	5/5/98	5/5/98
Date Received:	5/6/98	5/6/98	5/6/98	5/6/98	5/6/98
Units:	mg/l	mg/l	mg/l	mg/l	mg/l
Date of Extraction/Prep:	5/7/98	5/7/98	5/7/98	5/7/98	5/7/98
Date of Analysis:	5/7/98	5/7/98	5/7/98	5/7/98	5/7/98
Analyst:	DJS	DJS	DJS	DJS	DJS
Method:	8100 Mod	8100 Mod	8100 Mod	8100 Mod	8100 Mod
Dilution Factor:	1	1	10	10	1
TPH (C9-C40)	< 0.5	1.8	100	110	< 0.5

Approved By: Timothy Schaper Organics Supervisor

Timothy Schaper 5/12/98



eastern analytical, inc.

25 Chenell Drive / Concord, NH 03301 / TEL (603) 228-0525 / 1-800-287-0525
FAX (603) 228-4591 / E-Mail: front_office@ealabs.com

12377

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REQUESTED ANALYSES

ITEM # for lab use only	SAMPLE I.D.	SAMPLING DATE / TIME	MATRIX A - Air S - Soil GW - Ground Water SW - Surface Water DW - Drinking Water WW - Waste Water <input type="checkbox"/> Other	G-Grab, C-Comp	524.2 <input type="checkbox"/> 8260B	TICs	8021B <input type="checkbox"/> 8260B-TCL <input type="checkbox"/> 624 (8240)	8021B-Haloc <input type="checkbox"/> 601 (8010)	8021B-ETEX <input type="checkbox"/> 602 (8020)	MA YPH <input type="checkbox"/> ME GRO <input type="checkbox"/> 6015	MA EPH <input type="checkbox"/> ME DRO <input type="checkbox"/> Without Targets	TPH 8100 MOD <input type="checkbox"/> 8270 <input type="checkbox"/> 625	ABN <input type="checkbox"/> A <input type="checkbox"/> BN <input type="checkbox"/> PAH	8080 <input type="checkbox"/> 608	PCBs <input type="checkbox"/> Pesticides	Metals (list below)	Metals (list below)	Metals (list below)	TCLP <input type="checkbox"/> EPTOX	TSS <input type="checkbox"/> TDS <input type="checkbox"/> TS	F <input type="checkbox"/> SO ₄ <input type="checkbox"/> NO ₃ <input type="checkbox"/> NO ₂	pH <input type="checkbox"/> Spec. Con. <input type="checkbox"/> BOD	T. Alk <input type="checkbox"/> Carb. Alk <input type="checkbox"/> Bi. Alk	TKN <input type="checkbox"/> NH ₄ <input type="checkbox"/> T. Phos.	COO <input type="checkbox"/> TOC <input type="checkbox"/> Phenols	Oil & Grease <input type="checkbox"/> TPH 41&1	CN <input type="checkbox"/> Formaldehyde	T. Col <input type="checkbox"/> E. Col <input type="checkbox"/> F. Col <input type="checkbox"/> F. Strep	# Of Containers	NOTES				
1	MW-1	5/5/98 12:50 PM	GW				<input checked="" type="checkbox"/>																											
2	MW-2	5/5/98 1:20 PM					<input checked="" type="checkbox"/>																											
3	MW-3	5/5/98 1:30 PM					<input checked="" type="checkbox"/>																											
4	MW-4	5/5/98 1:05 PM					<input checked="" type="checkbox"/>																											
5	FB-1	5/5/98 1:30 PM	DW				<input checked="" type="checkbox"/>																											

Low level detection limits (check if needed and list in notes)

PRESERVATIVE: H-HCl; N-HNO₃; S-H₂SO₄; Na-NaOH

PROJECT MANAGER: Ted Reeves
 COMPANY: DSM Environmental
 ADDRESS: Thrasher Rd Rt 5 Po Box 466
 CITY: Ascutney STATE VT ZIP 05030
 PHONE: (802) 674-2840 EXT:
 FAX: (802) 674-6915
 E-MAIL:
 PROJECT I.D.: Brown's Summit Sales
 STATE: NH ☐ OTHER VT
☐ Site historically contaminated ☐ Compliance Testing

RESULTS NEEDED BY
 (enter preferred date):
 (Guaranteed rapid turnaround must have pre-approval)
 NOTES: (i.e. Special Detection Limits, Etc. Info. if different)

QA / QC Reporting Level

☐ A ☐ B ☐ C

Reporting Options

☐ Hard Copy

☐ Fax

Electronic:

☐ E-Mail ☐ Disk

FOR LAB USE ONLY

Custody Seal Intact?

☐ Yes ☐ No

Cold?

☒ Yes ☐ No

Quote #

P.O. #

Sampler(s):

Relinquished by James S. Giddings Date 5/5/98 Time 2:21 pm Received by Chris Kelly

Relinquished by Date Time Received by

Relinquished by Date Time Received by

(WHITE - Original) (YELLOW - Lab File) (PINK - Patient Mail)